



SEQUENCE LISTING

#5

<110> CONNEX GMBH

<120> New method for detecting acid-resistant microorganisms in the stool

<130> C 1786 PCT

<140> PCT/EP99/08212

<141> 1999-10-29

<160> 64

<170> PatentIn Ver. 2.1

<210> 1

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<212> PRT

<213> Artificial Sequence

<220>

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Gly Phe Ser Leu Ser Arg Tyr Ser Val His

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10

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<213> Artificial Sequence

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Met Ile Trp Gly Gly Gly Ser Thr Asp Tyr Asn Ser Gly Leu Lys Ser

1

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Asn Met Gly Gly Arg Tyr Pro Asp Tyr Phe Asp Tyr

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<210> 4

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<212> DNA

<213> Artificial Sequence

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gggttctcat tatccagata tagtgtacac

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<211> 48

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48

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36

<210> 7

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Arg Ala Ser Lys Ser Val Ser Thr Ser Gly Tyr Ser Tyr Ile His
1 5 10 15

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<400> 8

Leu Ala Ser Asn Leu Glu Ser
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<210> 9

<211> 9

<212> PRT

<213> Artificial Sequence

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<400> 9

Gln His Ser Arg Glu Leu Pro Leu Thr

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<210> 11
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 cttgcatcca acctagaatc t 21

<210> 12
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<220>
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<400> 12
 cagcacagta gggagcttcc gctcacg 27

<210> 13
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<220>
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<400> 13
 Gly Phe Thr Phe Asn Ser Tyr Ala Met Tyr
 1 5 10

<210> 14
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 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 14
 Arg Ile Arg Ser Lys Ser Asp Asn Tyr Ala Thr Tyr Tyr Ala Asn Ser
 1 5 10 15

Val Lys Asp

<210> 15
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<220>
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<400> 15
 Asp His Asp Lys Phe Pro Phe Tyr Tyr Ala Leu Asp Tyr
 1 5 10

<210> 16
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 ggtttcacct tcaattccta tgccatgtac 30

<210> 17
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<400> 17
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<210> 18
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<400> 18
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<210> 19
 <211> 12
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Thr Ala Ser Ser Ser Val Ser Ser Ser Tyr Leu His
 1 5 10

<210> 20

<211> 7

<212> PRT

<213> Artificial Sequence

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Ser Thr Ser Asn Leu Ala Ser
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<210> 21

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Artificial Sequence

<400> 21

His Gln Tyr His Arg Ser Pro Pro Thr
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<210> 22

<211> 36

<212> DNA

<213> Artificial Sequence

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<210> 23

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<212> DNA

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<223> Description of Artificial Sequence: Artificial Sequence

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agcacttcca acctggcttc t

21

<210> 24

<211> 27

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Artificial Sequence

<400> 24

caccagtatc atcgttcccc accgacg

27

<210> 25

<211> 10

<212> PRT

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<400> 25

Gly	Phe	Thr	Phe	Ser	Ser	His	Phe	Met	Ser
1				5				10	

<210> 26

<211> 16

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<400> 26

Ser	Ile	Ser	Ser	Gly	Gly	Asp	Ser	Phe	Tyr	Pro	Asp	Ser	Leu	Lys	Gly
1				5				10					15		

<210> 27

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 27

Asp	Tyr	Ser	Trp	Tyr	Ala	Leu	Asp	Tyr
1				5				

<210> 28

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 28

Gly	Tyr	Ala	Phe	Ser	Thr	Ser	Trp	Met	Asn
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<210> 29

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

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<400> 29

Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe Lys
 1 5 10 15

Gly

<210> 30

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 30

Glu Asp Ala Tyr Tyr Ser Asn Pro Tyr Ser Leu Asp Tyr
 1 5 10

<210> 31

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 31

ggctacgcat tcagtacctc ctggatgaac

30

<210> 32

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 32

cggatttattc ctggagatgg agatactaac tacaatggga agttcaaggg c

51

<210> 33

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 33

gaggatgcct attatagtaa cccctatagt ttggactac

39

<210> 34

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 34

ggattcactt tcagtagcca ttcatgtct

30

<210> 35

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 35

tccattagta gtggtggtga cagtttctat ccagacagtc tgaagggc

48

<210> 36

<211> 27

<212> DNA

<213> Artificial Sequence

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<400> 36

gactactctt ggtatgcttt ggactac

27

<210> 37

<211> 11

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Artificial Sequence

<400> 37

Arg	Ala	Ser	Gln	Ser	Ile	Gly	Thr	Arg	Ile	His
1				5					10	

<210> 38

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 38

Tyr	Gly	Ser	Glu	Ser	Ile	Ser
1				5		

<210> 39

<211> 9

<212> PRT

<213> Artificial Sequence

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<400> 39

Gln Gln Ser Asn Thr Trp Pro Leu Thr
1 5

<210> 40

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 40

His Ala Ser Gln Asn Ile Asn Val Trp Leu Ser
1 5 10

<210> 41

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 41

Lys Ala Ser Asn Leu His Thr
1 5

<210> 42

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 42

Gln Gln Gly Arg Ser Tyr Pro Leu Thr
1 5

<210> 43

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 43

agggccagtc agagcattgg cacaagaata cac

33

<210> 44

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 44

tatggttctg agtctatctc t

21

<210> 45

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 45

caacaaagta atacctggcc gctcacg

27

<210> 46

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 46

catgccagtc agaacattaa tgtttggtta agc

33

<210> 47

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 47

aaggcttcca acttgcacac a

21

<210> 48

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial Sequence

<400> 48

caacagggtc gaagttatcc tctcacg

27

<210> 49

<211> 333

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(333)

<400> 49

gac att gtg ctg aca cag tct cct gct tcc tta gct gta tct ctg ggg 48
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
 1 5 10 15

cag agg gcc acc atc tca tgc agg gcc agc aag agt gtc agt aca tct 96
 Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser Thr Ser
 20 25 30

ggc tat agt tac ata cac tgg tac caa cag aaa cca gga cag cca ccc 144
 Gly Tyr Ser Tyr Ile His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

aaa ctc ctc atc ttt ctt gca tcc aac cta gaa tct ggg gtc cct gcc 192
 Lys Leu Leu Ile Phe Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
 50 55 60

agg ttc agt ggc agt ggg tct ggg aca gac ttc acc ctc aac atc cat 240
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn Ile His
 65 70 75 80

cct gtg gag gag gag gat gct gca acc tat cac tgt cag cac agt agg 288
 Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr His Cys Gln His Ser Arg
 85 90 95

gag ctt ccg ctc acg ttc ggt gct ggg acc aag ctg gag ctg aaa 333
 Glu Leu Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
 100 105 110

<210> 50

<211> 111

<212> PRT

<213> Mus musculus

<400> 50

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
 1 5 10 15

Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser Thr Ser
 20 25 30

Gly Tyr Ser Tyr Ile His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

Lys Leu Leu Ile Phe Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
 50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn Ile His
 65 70 75 80

Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr His Cys Gln His Ser Arg
 85 90 95

Glu Leu Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
 100 105 110

<210> 51

<211> 363

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1) .. (363)

<400> 51

gag	gtg	cag	ctg	ctc	gag	gag	tca	gga	cct	ggc	ctg	gtg	gca	ccc	tca	48
Glu	Val	Gln	Leu	Leu	Glu	Glu	Ser	Gly	Pro	Gly	Leu	Val	Ala	Pro	Ser	
1				5					10					15		
cag	agc	ctg	tcc	atc	aca	tgc	act	gtc	tct	ggg	ttc	tca	tta	tcc	aga	96
Gln	Ser	Leu	Ser	Ile	Thr	Cys	Thr	Val	Ser	Gly	Phe	Ser	Leu	Ser	Arg	
			20						25					30		
tat	agt	gta	cac	tgg	gtt	cgc	cag	cct	cca	gga	aag	ggg	ctg	gag	tgg	144
Tyr	Ser	Val	His	Trp	Val	Arg	Gln	Pro	Pro	Gly	Lys	Gly	Leu	Glu	Trp	
			35				40						45			
ctg	gga	atg	ata	tgg	ggg	ggg	gga	agc	aca	gac	tat	aat	tca	ggg	ctc	192
Leu	Gly	Met	Ile	Trp	Gly	Gly	Gly	Ser	Thr	Asp	Tyr	Asn	Ser	Gly	Leu	
	50					55						60				
aaa	tcc	aga	ctg	agc	atc	agc	aac	gac	aac	tcc	aag	agc	caa	gtt	ttc	240
Lys	Ser	Arg	Leu	Ser	Ile	Ser	Asn	Asp	Asn	Ser	Lys	Ser	Gln	Val	Phe	
	65				70					75					80	
tta	aaa	atg	aac	agt	ctg	caa	act	gat	gac	aca	gcc	att	tac	tac	tgt	288
Leu	Lys	Met	Asn	Ser	Leu	Gln	Thr	Asp	Asp	Thr	Ala	Ile	Tyr	Tyr	Cys	
				85					90					95		
gcc	aga	aat	atg	ggg	ggg	agg	tac	ccg	gac	tac	ttt	gac	tac	tgg	ggc	336
Ala	Arg	Asn	Met	Gly	Gly	Arg	Tyr	Pro	Asp	Tyr	Phe	Asp	Tyr	Trp	Gly	
			100					105						110		
caa	ggc	acc	act	ctc	aca	gtc	tcc	tca								363
Gln	Gly	Thr	Thr	Leu	Thr	Val	Ser	Ser								
		115					120									

<210> 52

<211> 121

<212> PRT

<213> Mus musculus

<400> 52

Glu	Val	Gln	Leu	Leu	Glu	Glu	Ser	Gly	Pro	Gly	Leu	Val	Ala	Pro	Ser	
1				5					10					15		
Gln	Ser	Leu	Ser	Ile	Thr	Cys	Thr	Val	Ser	Gly	Phe	Ser	Leu	Ser	Arg	
			20						25					30		
Tyr	Ser	Val	His	Trp	Val	Arg	Gln	Pro	Pro	Gly	Lys	Gly	Leu	Glu	Trp	
			35				40					45				
Leu	Gly	Met	Ile	Trp	Gly	Gly	Gly	Ser	Thr	Asp	Tyr	Asn	Ser	Gly	Leu	
	50					55					60					
Lys	Ser	Arg	Leu	Ser	Ile	Ser	Asn	Asp	Asn	Ser	Lys	Ser	Gln	Val	Phe	
	65				70					75					80	
Leu	Lys	Met	Asn	Ser	Leu	Gln	Thr	Asp	Asp	Thr	Ala	Ile	Tyr	Tyr	Cys	
				85					90					95		

Ala Arg Asn Met Gly Gly Arg Tyr Pro Asp Tyr Phe Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Thr Leu Thr Val Ser Ser
 115 120

<210> 53
 <211> 324
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(324)

<400> 53
 gag ctc gtg ctc acc cag tct cca aca atc atg tct gca tct cta ggg 48
 Glu Leu Val Leu Thr Gln Ser Pro Thr Ile Met Ser Ala Ser Leu Gly
 1 5 10 15
 gaa cgg gtc acc atg acc tgc act gcc agc tca agt gtg agt tcc agt 96
 Glu Arg Val Thr Met Thr Cys Thr Ala Ser Ser Ser Val Ser Ser Ser
 20 25 30
 tac ttg cac tgg tac cag cag aag cca gga tcc tcc ccc aaa ctc tgg 144
 Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
 35 40 45
 att tat agc act tcc aac ctg gct tct gga gtc cca gta cgc ttc agt 192
 Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Val Arg Phe Ser
 50 55 60
 ggc agt ggg tct gtg acc tct tac tct ctc aca atc agc agc atg gag 240
 Gly Ser Gly Ser Val Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
 65 70 75 80
 gct gaa gat gct gcc act tat tat tgc cac cag tat cat cgt tcc cca 288
 Ala Glu Asp Ala Ala Thr Tyr Tyr Cys His Gln Tyr His Arg Ser Pro
 85 90 95
 ccg acg ttc ggt gga ggc acc aag ctg gaa atc aaa 324
 Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 54
 <211> 108
 <212> PRT
 <213> Mus musculus

<400> 54
 Glu Leu Val Leu Thr Gln Ser Pro Thr Ile Met Ser Ala Ser Leu Gly
 1 5 10 15
 Glu Arg Val Thr Met Thr Cys Thr Ala Ser Ser Ser Val Ser Ser Ser
 20 25 30
 Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
 35 40 45
 Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Val Arg Phe Ser

50		55		60
Gly Ser Gly Ser Val Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu				
65		70		75
				80
Ala Glu Asp Ala Ala Thr Tyr Tyr Cys His Gln Tyr His Arg Ser Pro				
	85		90	95
Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys				
	100		105	

<210> 55
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 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(375)

<400> 55	
gag gtg cag ctg ctc gag gag tct ggg gga gga ttg gtc caa cct aca	48
Glu Val Gln Leu Leu Glu Glu Ser Gly Gly Gly Leu Val Gln Pro Thr	
1 5 10 15	
gga tca ttg aaa ctc tca tgt gcc gcc tct ggt ttc acc ttc aat tcc	96
Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser	
20 25 30	
tat gcc atg tac tgg gtc cgc cag gct cca gga aag ggt ttg gag tgg	144
Tyr Ala Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp	
35 40 45	
gtt gct cgc ata aga agt aaa agt gat aat tat gca aca tat tat gcc	192
Val Ala Arg Ile Arg Ser Lys Ser Asp Asn Tyr Ala Thr Tyr Tyr Ala	
50 55 60	
aat tca gtg aaa gac aga ctc acc atc tcc aga gat gat tca caa aac	240
Asn Ser Val Lys Asp Arg Leu Thr Ile Ser Arg Asp Asp Ser Gln Asn	
65 70 75 80	
atg ctc tat ctg cag atg aac aac ctg aaa act gag gac aca gcc atg	288
Met Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met	
85 90 95	
tat tac tgt gtg aga gat cat gat aag ttt cct ttt tac tat gct ctg	336
Tyr Tyr Cys Val Arg Asp His Asp Lys Phe Pro Phe Tyr Tyr Ala Leu	
100 105 110	
gac tac tgg ggt cca gga acc tta gtc acc gtc tcc tca	375
Asp Tyr Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser	
115 120 125	

<210> 56
 <211> 125
 <212> PRT
 <213> Mus musculus

<400> 56
 Glu Val Gln Leu Leu Glu Glu Ser Gly Gly Gly Leu Val Gln Pro Thr

1	5	10	15
Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser	20	25	30
Tyr Ala Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp	35	40	45
Val Ala Arg Ile Arg Ser Lys Ser Asp Asn Tyr Ala Thr Tyr Tyr Ala	50	55	60
Asn Ser Val Lys Asp Arg Leu Thr Ile Ser Arg Asp Asp Ser Gln Asn	65	70	75
Met Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met	85	90	95
Tyr Tyr Cys Val Arg Asp His Asp Lys Phe Pro Phe Tyr Tyr Ala Leu	100	105	110
Asp Tyr Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser	115	120	125

<210> 57
 <211> 321
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(321)

<400> 57	
gac atc ttg ctg act cag tct cca gcc atc ctg tct gtg agt cca gga	48
Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly	
1 5 10 15	
gaa aga gtc agt ttc tcc tgc agg gcc agt cag agc att ggc aca aga	96
Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Arg	
20 25 30	
ata cac tgg tat caa caa aga aca aat ggt tct cca agg ctt ctc ata	144
Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile	
35 40 45	
aag tat ggt tct gag tct atc tct ggg atc cct tcc agg ttt agt ggc	192
Lys Tyr Gly Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly	
50 55 60	
agt gga tca ggg aca gat ttt agt ctt agc atc aac agt gtc gag tct	240
Ser Gly Ser Gly Thr Asp Phe Ser Leu Ser Ile Asn Ser Val Glu Ser	
65 70 75 80	
gaa gat att gca gat tat tac tgt caa caa agt aat acc tgg ccg ctc	288
Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser Asn Thr Trp Pro Leu	
85 90 95	
acg ttc ggt gct ggg acc aag ctg gag ctg aaa	321
Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys	
100 105	

<210> 58
 <211> 107
 <212> PRT
 <213> Mus musculus

<400> 58
 Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly
 1 5 10 15
 Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Arg
 20 25 30
 Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile
 35 40 45
 Lys Tyr Gly Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Ser Leu Ser Ile Asn Ser Val Glu Ser
 65 70 75 80
 Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser Asn Thr Trp Pro Leu
 85 90 95
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
 100 105

<210> 59
 <211> 369
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(369)

<400> 59
 gag gtg cag ctg ctc gag cag tct gga gct gag ctg gtg aag cct ggg 48
 Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Lys Pro Gly
 1 5 10 15
 gcc tca gtg aag att tcc tgc aag gct tct ggc tac gca ttc agt acc 96
 Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Thr
 20 25 30
 tcc tgg atg aac tgg gtg aaa cag agg cct gga aag ggt ctt gag tgg 144
 Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp
 35 40 45
 att gga cgg att tat cct gga gat gga gat act aac tac aat ggg aag 192
 Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys
 50 55 60
 ttc aag ggc aag gcc aca ctg act gca gac aaa tcc tcc agc aca gcc 240
 Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala
 65 70 75 80
 tac atg caa ctc aac agc ctg aca tct gag gac tct gcg gtc tac ttc 288
 Tyr Met Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe
 85 90 95

tgt gta aga gag gat gcc tat tat agt aac ccc tat agt ttg gac tac 336
 Cys Val Arg Glu Asp Ala Tyr Tyr Ser Asn Pro Tyr Ser Leu Asp Tyr
 100 105 110

tgg ggt caa gga acc tca gtc acc gtc tcc tca 369
 Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 60
 <211> 123
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<400> 60
 Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Lys Pro Gly
 1 5 10 15
 Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Thr
 20 25 30
 Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp
 35 40 45
 Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys
 50 55 60
 Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala
 65 70 75 80
 Tyr Met Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe
 85 90 95
 Cys Val Arg Glu Asp Ala Tyr Tyr Ser Asn Pro Tyr Ser Leu Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
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 Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
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 gac aca att acc atc act tgc cat gcc agt cag aac att aat gtt tgg 96
 Asp Thr Ile Thr Ile Thr Cys His Ala Ser Gln Asn Ile Asn Val Trp
 20 25 30
 tta agc tgg tat cag cag aaa cca gga gat atc cct aaa cta ttg atc 144
 Leu Ser Trp Tyr Gln Gln Lys Pro Gly Asp Ile Pro Lys Leu Leu Ile
 35 40 45

tat aag gct tcc aac ttg cac aca ggc gtc cca tca agg ttt agt ggc 192
 Tyr Lys Ala Ser Asn Leu His Thr Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

agt gga tct gga aca ggt ttc aca tta gtc atc agc agc ctg cag cct 240
 Ser Gly Ser Gly Thr Gly Phe Thr Leu Val Ile Ser Ser Leu Gln Pro
 65 70 75 80

gaa gac att gcc act tac tac tgt caa cag ggt cga agt tat cct ctc 288
 Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Gly Arg Ser Tyr Pro Leu
 85 90 95

acg ttc ggt gct ggg acc aag ctg gag ctg aaa 321
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
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<210> 62

<211> 107

<212> PRT

<213> Mus musculus

<400> 62

Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
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Asp Thr Ile Thr Ile Thr Cys His Ala Ser Gln Asn Ile Asn Val Trp
 20 25 30

Leu Ser Trp Tyr Gln Gln Lys Pro Gly Asp Ile Pro Lys Leu Leu Ile
 35 40 45

Tyr Lys Ala Ser Asn Leu His Thr Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Gly Phe Thr Leu Val Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Gly Arg Ser Tyr Pro Leu
 85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
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<210> 63

<211> 354

<212> DNA

<213> Mus musculus

<220>

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<222> (1)..(354)

<400> 63

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 1 5 10 15

ggg tcc ctg caa ctc tcc tgt tca gcc tct gga ttc act ttc agt agc 96
 Gly Ser Leu Gln Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser

20 25 30

cat ttc atg tct tgg gtt cgc caa act cca gag aag agg ctg gag tgg 144
His Phe Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp
35 40 45

gtc gca tcc att agt agt ggt ggt gac agt ttc tat cca gac agt ctg 192
Val Ala Ser Ile Ser Ser Gly Gly Asp Ser Phe Tyr Pro Asp Ser Leu
50 55 60

aag ggc cga ttc gcc atc tcc aga gat aat gcc agg aac atc ctg ttc 240
Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ala Arg Asn Ile Leu Phe
65 70 75 80

ctg caa atg agc agt ctg agg tct gag gac tcg gcc atg tat ttc tgt 288
Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Ser Ala Met Tyr Phe Cys
85 90 95

aca aga gac tac tct tgg tat gct ttg gac tac tgg ggt caa gga acc 336
Thr Arg Asp Tyr Ser Trp Tyr Ala Leu Asp Tyr Trp Gly Gln Gly Thr
100 105 110

tca gtc acc gtc tcc tca 354
Ser Val Thr Val Ser Ser
115

<210> 64
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<400> 64
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1 5 10 15

Gly Ser Leu Gln Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser
20 25 30

His Phe Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp
35 40 45

Val Ala Ser Ile Ser Ser Gly Gly Asp Ser Phe Tyr Pro Asp Ser Leu
50 55 60

Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ala Arg Asn Ile Leu Phe
65 70 75 80

Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Ser Ala Met Tyr Phe Cys
85 90 95

Thr Arg Asp Tyr Ser Trp Tyr Ala Leu Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Ser Val Thr Val Ser Ser
115